



PLANT IMMIGRANTS.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is made up of descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS which will be sent you in the autumn and in which will be listed all plants available at that time. Regular requests checked off on the check list sent out with the catalogue are not kept over from year to year. If you are especially interested in some particular plant in the catalogue write and explain in detail your fitness to handle it.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

David Fairchild,

Agricultural Explorer in Charge.

February 21, 1919.

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Boehmeria macrophylla (Urticaceae), 46080. From Darjeeling, India. Presented by Mr. G. H. Cave, Director, Lloyd Botanic Garden. A pretty shrub with narrow, dentate leaves, 6 to 12 inches in length, and very long, drooping flower spikes. It is a native of Upper Burma and northeastern India, where it ascends to an altitude of 4,000 feet. The wood is light reddish brown and moderately hard, and the bark yields a good fiber which is used for ropes and fishing lines. (Adapted from J. S. Gamble, *Manual of Indian Timbers*, p. 658, 1902.)

Caján indicum (Fabaceae), 46050. **Pigeon-pea.** From New York, N. Y. Purchased from S. Rosen. "The pigeon-pea, or **guandu**, supposed to be a native of India, is cultivated widely for food in the tropics and subtropics. It is perennial in frostless regions, but is usually cultivated as an annual. About ten months are required to mature the seed. Frost kills the plants. There are many varieties of pigeon-peas, some suitable for food and some not. Being a legume, the crop is valuable for soil improvement as well as for the seed. The plant develops into a large, semi-woody bush reaching a height of from 5 to 10 feet. When grown for seed, plant 2 or 3 seeds in each hill, in four-foot rows, and 3 feet apart in the row, thinning later to one plant in a hill. Pigeon-peas are resistant to excessive rains in the tropics, and the seed does not rot when planted as is the tendency with some other leguminous crops. Although the skin of the pigeon-pea is a little tough the flavor of the peas is good. They are cooked like ordinary shelled beans, that is, soaked overnight and then parboiled 10 to 15 minutes with a little soda in the water; boiling for one hour or a little more after this usually cooks them completely." (Young.) "The Hawaiian Experiment Station, at Hái-kee on the island of Maui, has grown 15 acres of this pea as a forage crop; and Mr. Krause informs us that the practice is to cut the upper third of the plant, which bears practically all the pods, cure this like hay on portable hay-curing trucks, and, after 7 to 10 days, mill it by the hammer-throw process. The meal is as fine as alfalfa meal, and is used as a base with ground cane tops, corn meal and molasses (35% of the meal being used). This has a feeding value higher than that of alfalfa. It is cut twice and the plants are in their prime the third year. The yields range from 3 to 4 tons of cured pigeon-pea tops per

annum on land which will not produce 25 bushels of corn. The species is decidedly drought-resistant as tropical plants go." (Fairchild.)

Chrysophyllum cainito (Sapotaceae), 46150. **Star-apple.** From Panama, Republic of Panama. Presented by Mr. Ramon Arias-Feraud. "Purple **star-apple** seeds." (Arias-Feraud.) A handsome tropical American fruit and ornamental tree, evergreen, up to 50 feet high, with beautiful broad leaves, smooth and green above and silky and golden yellow on the under surface. Fruit the size of an apple with star-shaped core and purple flesh and skin. The pulp is said to be delicious if the fruit is left on the tree until ripe. Will not stand frost.

Elaeis melanococca (Phoenicaceae), 46048. **Noli palm.** From San Lorenzo, Tolima, Colombia. Presented by Mr. M. T. Dawe, Estacion Agronomica Tropical. A palm with practically no stem, the leaves, 8 to 10 feet long, being borne from within 2 to 6 feet from the ground. The fruits, which are compressed, irregular, and orange-red in color when ripe, are borne in dense clusters. Two classes of oil are obtained: red oil from the coating of the seeds, and a clear oil from the kernels; the latter is very much prized as a cooking oil. The palm is common in the lowlands among flooded areas under conditions similar to those of our flooded bottom land along the Mississippi and other Gulf Coast rivers. (Adapted from Curran.) "This palm is called **noli palm** in Colombia, **coquito** in Costa Rica, and **corozo colorado** in Panama." (C. B. Doyle.)

Fraxinus floribunda (Oleaceae), 46083. **Ash.** From Darjeeling, India. Presented by Mr. G. H. Cave, Director, Lloyd Botanic Garden. "This is a large deciduous tree found growing in the Himalayas from Indus to Sikkim, at elevations between 5,000 and 8,500 feet. A concrete, saccharine exudation called manna is obtained from the stem of this tree and is employed as a substitute for the officinal manna. The sugar, mannite, contained in this exudation, differs from cane and grape sugar in not being readily fermentable, although under certain conditions it does ferment and yields a quantity of alcohol varying in strength from 13 to 33 per cent. Like the officinal manna this is used for its sweetening and slightly laxative properties. The wood is white with a reddish tinge and

soft to moderately hard in structure, resembling in some respects the European ash. This tree is very valuable and is used in the manufacture of oars, sampan poles, plows, platters, spinning wheels, and for many other purposes." (Watt's Dictionary of the Economic Products of India, vol. 3, p. 442.)

Garcinia mangostana (Clusiaceae), 46204. **Mangosteen.** From Buitenzorg, Java. Presented by the Director, Botanic Garden. "This delicious fruit is about the size of a mandarin orange, round and slightly flattened at each end, with a smooth, thick rind, rich red-purple in color, with here and there a bright, hardened drop of yellow juice which marks some injury to the rind when it was young. As these mangosteens are sold in the Dutch East Indies - heaped up on fruit baskets or made up into long, regular bunches, with thin strips of braided bamboo - they are as strikingly handsome as anything of the kind could well be; but it is only when the fruit is opened that its real beauty is seen. The rind is thick and tough, and, in order to get at the pulp inside, it requires a circular cut with a sharp knife to lift the top half off like a cap, exposing the white segments, five, six, or seven in number, lying loose in the cup. The cut surface of the rind is of a most delicate pink color and is studded with small yellow points, formed by the drops of exuding juice. As you lift out of this cup, one by one, the delicate segments, which are the size and shape of those of a mandarin orange, the light pink sides of the cup, and the veins of white and yellow embedded in it, are visible. The separate segments are between snow-white and ivory in color and are covered with a delicate network of fibers, and the side of each segment, where it presses against its neighbor, is translucent and slightly tinged with pale green. As one poises the dainty bit of snowy fruit on his fork and looks at the empty pink cup from which it has been taken, he hardly knows whether the delicate flavor or the beautiful coloring of the fruit pleases him the more; and he invariably stops to admire the rapidly deepening color of the cut rind as it changes, on exposure to the air, from light pink to deep brown. The texture of the mangosteen pulp much resembles that of a well-ripened plum, only it is so delicate that it melts in your mouth like a bit of ice cream. The flavor is quite indescribably delicious and resembles nothing you know of, and yet reminds you,

with a long after-taste, of all sorts of creams and ices. There is nothing to mar the perfection of the fruit, unless it be that the juice from the rind forms an indelible stain on a white napkin. Even the seeds are often partly or wholly lacking, and, when present, are generally so thin and small that they are really no trouble to get rid of. Where cheap and abundant, as in Java, one eats these fruits by the half peck, and is never tired of them. They produce no feeling of satiety, such as the banana and the mango do, for there is little substance to the delicate pulp." (David Fairchild.)

Gossypium barbadense x hirsutum (Malvaceae), 46074. **Cotton.** From Brisbane, Australia. Presented by Mr. Leslie Gordon Corrie. "**Jones' Hybrid.** This variety was first observed in numerous fields of cotton in 1906, and, as far as can be surmised, is a sport originating from a Sea Island variety **Seabrook** and an Upland type **Russell's Big Boll.**" (Quoted from an article by Mr. D. Jones, in the Queensland Agricultural Journal for March, 1916, p. 153.)

Lansium domesticum (Meliaceae), 46220. **Langsat.** From Buitenzorg, Java. Presented by the Director, Botanic Garden. A moderate-sized ornamental tree, native of Malaya. It bears long, pendant clusters of closely packed berries which have a thin tough skin enclosing opaque, aromatic, juicy pulp. The berries are pale yellow when ripe and are said to be much relished in their native country, being "eaten fresh or variously prepared." Dr. Ward described it as "one of the finest fruits of the Malayan peninsula." (Adapted from MacMillan, A Handbook of Tropical Gardening and Planting, ed. 2, p. 168.) For previous introduction and description see S. P. I. No. 45616.

Prunus cerasoides (Amygdalaceae), 46093. From Darjeeling, India. Presented by Mr. G. H. Cave, Director, Lloyd Botanic Garden. A large tree, making a brilliant appearance when in flower, native of northern India at an altitude of 3,000 to 8,000 feet. The leaves are ovate to lanceolate, 3 to 5 inches long, with doubly serrate margins. The flowers, which appear before the leaves, are either solitary or in umbels and are rose-red or white. The acid fruits, on prominently thickened pedicels, are oblong and have a thin, yellowish or reddish flesh. (Adapted from Hooker, Flora of British India, vol. 2, p. 314.)

Rosa chinensis (Rosaceae), 46078. **Rose.** From England. Purchased from Messrs. Paul & Son, Cheshunt, Herts. "**Red-Letter Day.** Garden form of *Rosa chinensis*. Dwarf shrub with erect stems growing about 2 feet high. Flowers single or semidouble, intense scarlet-crimson, best of its color. Desirable for breeding." (W. Van Fleet.)

Rosa macrophylla (Rosaceae), 46097. **Rose.** From Darjeeling, India. Presented by Mr. G. H. Cave, Director, Lloyd Botanic Garden. A shrub, native of the Himalayas and western China, becoming 8 feet or more in height, with erect stems and arching branches usually furnished with straight prickles, up to half an inch in length. The leaves, which are composed of from 5 to 11 leaflets, approach 8 inches in length. The deep pink or red flowers are sometimes 3 inches in width, and are produced singly or in clusters of varying number. The elongated, pear-shaped fruits are bright red. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 433.)

Rubia cordifolia (Rubiaceae), 46099. **Madder.** From Darjeeling, India. Presented by Mr. G. H. Cave, Director, Lloyd Botanic Garden. An herbaceous creeper with perennial roots, which is met with in the hilly districts of India, from the northwest Himalayas eastward and southward to Ceylon. The Manjit root, or East India madder, is obtained for the most part from this species and is much employed by the natives of India for dyeing coarse cotton fabric, or the thread from which it is woven, various shades of scarlet, coffee-brown, or mauve. The East India madder of commerce consists of a short stalk from which diverge numerous cylindrical roots, about the size of a quill. These are covered with a thin, brownish pulp which peels off in flakes, disclosing a red-brown bark marked by longitudinal furrows. Many different methods are used for dyeing with this madder, a short account of which may be found in Watt's Dictionary of the Economic Products of India, from which this description is adapted.

Salvia hispanica (Menthaceae), 46146. From Mexico. Presented by Mrs. Zelia Nuttall, Coyoacan, D. F. An herbaceous perennial with ovate, serrate leaves and quadrangular spikes of blue flowers. The mucilaginous seeds are used in making the Mexican drink called "chia."

Xanthosoma sagittaeifolium (Araceae), 46030. **Yautia.** From Porto Rico. Presented by Mr. W. J. McGee, Chief, Bureau of Chemistry Experiment Station, San Juan. "A yellow-fleshed yautia of good quality. It will be of especial interest in central and southern Florida." (R. A. Young.)

Zea mays (Poaceae), 46056. **Corn.** From Mexico. Presented by the Estate of Diego Moreno, Guadalajara, Jalisco. "**Maiz pepitilla.** It is sown here in two ways: either three grains each in hills 1 m. (3½ ft.) apart, or single grains in hills 0.25 m. apart, the latter being the better method. In either case, the furrows are a distance of 84 cm. (33 in.) apart. In hot lands, or along the coast, it yields in three months; in lands of moderate temperature, in six months; and in cooler lands, from seven to eight months. It is very well adapted to lands where the rainfall is not abundant for it is more drought-resistant than any other variety. The stalk grows more than that of any other corn and generally each stalk bears two ears if the land is ordinary, and three or more ears when the land is very good. Another advantage is that the ears rot less than those of other varieties because, when mature, they are enclosed perfectly by the leaves which do not permit water to enter. The cob is very slender and the grain is long; hence the yield is high. A good yield generally gives 70 kgs. to the hectol. (about 63 lbs. to the bu.) and a very good yield as high as 72 kgs. (65 lbs.) This corn is highly valued because it contains so much starch; when made into meal for use in the preparation of tortillas, it swells a great deal and gives better results than other kinds. As the grain contains less oil than other varieties, it is not good for fattening hogs but is suitable for other animals." (Moreno.)

Notes on Behavior of Previous Introductions.

Mr. J. F. Keltch, of Brayton, Tenn., reports: "The plum, (*Prunus salicina* x *cerasifera myrobalana*, S. P. I. No. 31652) you sent me three years ago, is the finest I ever saw. The tree bore last summer, and the fruits were extra large, smooth, sweet, and of fine flavor, beautiful in color and appearance. My neighbors all want some of the trees. One fruit man wants 100 or more. The tree is 10 feet tall, with a spread of 12 feet; it is growing in rocky, gravelly soil, and appears to be perfectly hardy on this cold mountain."

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